



## Fed-batch production of the hydrophobins RodA and RodB from *Aspergillus fumigatus* in host *Pichia pastoris*

Pedersen, Mona Højgaard; Borodina, Irina; Frisvad, Jens Christian; Søndergaard, Ib

*Publication date:*  
2011

[Link back to DTU Orbit](#)

### *Citation (APA):*

Pedersen, M. H., Borodina, I., Frisvad, J. C., & Søndergaard, I. (2011). *Fed-batch production of the hydrophobins RodA and RodB from Aspergillus fumigatus in host Pichia pastoris*. Abstract from 26th Fungal Genetics Conference, Pacific Grove, CA, United States. <http://www.fgsc.net/26thFGC/>

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Abstract for the meeting: 26th Fungal Genetics Conference, Asilomar Conference Center, Pacific Grove, CA, USA, March 15-20, 2011.

**Fed-batch production of the hydrophobins RodA and RodB from *Aspergillus fumigatus* in host *Pichia pastoris***

**M.H. Pedersen, I. Borodina, J.C. Frisvad and I. Søndergaard**

Systems Biology, Technical University of Denmark, Lyngby, Denmark.

**Objectives:** *Aspergillus fumigatus* expresses the hydrophobins RodA and RodB on the surface of its conidia. RodA is known to be important for the pathogenesis of the fungus, but the role of RodB is unknown. The aim was to produce recombinant RodA and RodB for further characterisation. **Methods and materials:** The genes encoding hydrophobins RodA and RodB was amplified by RT-PCR from the total RNA isolated from *A. fumigatus* (AF296 strain), and cloned into expression vectors pPICZ $\alpha$ A and pPICZB while adding a C-terminal 6xHis-tag. The linearized plasmids were transformed into *P. pastoris* strain X33. The expression of the RodA and RodB genes was first studied in culture flasks in buffered complex methanol medium as protein production was dependent on the methanol-induced AOX1 promoter. Later production was scaled up to a 2 L fed-batch fermentor. Hydrophobins were purified using His-select Nickel Affinity gel. The emulsifying properties of recombinant hydrophobins were investigated using oil-water emulsions studied by light microscopy. **Results:** Protein bands of expected size were detected by SDS-PAGE and western blotting in the fermentation broth. Fed-batch production yielded approximately 300 mg/L. rRodB showed good emulsifying properties. **Conclusion:** RodA and RodB from *A. fumigatus* were successfully produced by yeast host *Pichia pastoris* with good yields.